The Glory of the Tree

by Dr. B. K. Boom and H. Kleijn. First published in Great Britain, 1966, by George G. Harrap & Co. Ltd.; and by H. J. W. Becht's Uitgerversmaatschappy N.V., Amsterdam 1966; distributed in United States by Pat Ryan, Portland, Ore. 128 pp. \$12.50.

The Glory of the Tree is a magnificently illustrated volume which contains almost 200 color photographs and many line drawings. Now being printed in the Netherlands, it has been translated and is available for arborists and others interested in trees in the United States. Aiding in the translation for use here was Dr. Edgar T. Wherry, professor of Botany, Emeritus, University of Pennsylvania.

The authors describe and illustrate the beauty of individual trees in spring foliage, summer splendor, and wintertime power. Photos show each tree in its natural surroundings, whether in the forest, along highways, on plains, mountains, or wherever.

Illustrations in color are among the finest to be found on the subject.

In each instance, the authors present the structure, nomenclature, history and practical use of the specific species. The narrative includes many legends and much history about the origin and cultural importance of each.

The Rowan tree, as one example, is one of the Holy Trees of the old Celtic and Germanic worlds. It was thought to be of great spiritual power. The Ginkgo tree is believed by some Chinese and Japanese to have the power to turn away fire. The Cypress is an ancient tree which the Greeks considered a symbol of feminine beauty and also of death.

The authors also discuss the Laurel, Cherry, Medlar, Pine, Plane, Cedar, and many other trees from both the Old World and the New, as well as from Asia and the Middle East.

The Glory of the Tree is an important work for both professional and layman who find themselves interested in more than a surface knowledge of the tree. Special features include a list of botanical gardens and arboreta, a list of trees shown on postage stamps, an explanation of the Latin species names, and a selected list of books on trees.

Regarding the authors, H. Kleijn is one of the famous Dutch experts in the field of natural history and an author of many published works in the field. Dr. B. K. Boom is a horticultural taxonomist at the Institute of Horticultural Plantbreeding, Wageningen, Holland. G. D. Swanenburg de Veye, who made the photographs is a doctor of medicine, a member of the Royal Dutch Society for Natural History, and a writer on mycology.

For information, circle (703) on the reader service card in the front of this issue.





Six Rain Clox-8 electronic controllers work 'round the clock at Los Angeles home port of the "Columbia." Their job: to keep the 30-acre landing pad irrigated without interrupting her flight schedule (14 voyages daily), or showering her passengers. Team responsible, left to right, for the complex automatic sprinkler system installation: John Motshagen, sprinkler contractor; Carl D. Johnson, landscape architect, Westcoast Landscape Construction; and Jack Gray, irrigation specialist, Oranco Supply Co.

Automatic Irrigation For Goodyear Blimp Pad

Irrigating a landing pad for a blimp without dousing blimp or passengers was solved with six electronic controllers and a flock of impact sprinklers programmed to operate on a "flight schedule."

Goodyear Tire and Rubber Company wanted their new multi-million dollar Los Angeles home port for the "Columbia" (one of the company's two blimps which operate yearround) to have an all-turf 30acre landing pad, landscaped "in harmony with a neighboring golf course."

The problem of irrigating the turf arose because of the blimp's busy flight schedule: sprinkler spray could interfere with takeoffs and landings and might shower passengers and sightseers on the pad. (The "Columbia" makes as many as 14 voyages a day and sometimes flies at night.)

By programming the controllers to operate the 25,000 feet of sprinkler line only when the Columbia is in flight or safely docked for the night, proper irrigation is accomplished without conflicts.

With the completely automatic

Rain Bird system, and with the controllers located at the blimp administration building, one man can supervise irrigation of the entire 30 acres.

Landscape architect for the project was Carl D. Johnson, Westcoast Landscape Construction. The system was installed by John Motshagen, sprinkler contractor. All Rain Bird equipment was from Oranco Supply Co.

Colorado's Kincaid Heads New Shade Tree Group

Doyle Kincaid of Kincaid Tree Surgery, Fort Collins, Colo., was recently elected president of the newly organized Shade Tree Association of Mountain States.

Also elected to office were: Vice Pres.—Bill Schact, city forester of Colorado Springs; and Sec.-Treas. — Jim Matthews of John Bean division, Ford Motor Co., Boulder.

Specific objective of the association, according to Kincaid, is to promote planting and proper care of adapted shade tree varieties in Colorado and surrounding states.

Directors for the association are: C. G. Wilhelm of Wilhelm Tree Surgery in Denver; Earl Sinnamon of Swingle Tree Surgery, Denver; Jerry Morris of Rocky Mountain Tree Experts, Wheat Ridge; Bob Kirby of Kirby Tree Service in Colorado Springs; Don Young of Colorado State Forest Service, Canon City and Blair Adams of the University of Wyoming Extension Service, Laramie.

Newly elected officers of the Shade Tree Association of Mountain States are, front row, left to right: Bill Schacht, vice president; Doyle Kincaid, president; and Jim Matthews, secretarytreasurer. Three of the association's directors are, back row, left to right: Earl Sinnamon; C. G. Wilhelm; and Jerry Morris.



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Southern Weed Science Society elected new officers during its 1969 session, January 21-23 at Dallas. From left, seated: Leonard Lett of Colloidal Products Corp., Memphis, immediate past president; Dr. John B. Baker, Department of Botany and Plant Pathology at Louisiana State University, the new president; and Dr. Paul W. Santelmann, Department of Agronomy at Oklahoma State University, new secretary and treasurer. From left, standing: Douglas Boatright of Horne-Boatright Chemical Company at Birmingham, the new president-elect; Gill K. Brown of Georgia Power Company at Atlanta, executive board member, and Dr. A. Doug Worsham of the Dow Chemical Company at Atlanta, executive board member, and Dr. A. Doug Worsham of the Science Department, North Carolina State University, publications editor. The society scheduled its 1970 conference in Atlanta. Not shown here is the final member of the executive board, Dr. W. E. Chappel of Virginia Polytechnic Institute.



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For More Details Circle (106) on Reply Card

Buckner Catalog Describes New Long-Range Sprinklers

New from Fresno's Buckner Sprinkler Company is its 1969 Turf Sprinklers catalog describing the company's complete line of industrial sprinklers and irrigation accessories.

The 44-page booklet includes specifications, performance tables and prices for underground sprinklers and accessories, portable sprinkler units, heavy industrial turf products and automatic controllers and valves.

It also introduces a new, longrange portable sprinkler with full- or part-circle coverage and describes a new series of impact rotary pop-up sprinklers for long-range use.

For a free copy, circle (701) on the reader service card in this issue.

Grumman Develops Ag-Cat For High `N' Heavy Flying

Grumman Aircraft Engineering Corporation, Bethpage, N. Y., recently announced that the Federal Aviation Administration has certified its new 600-H.P. model of the Super Ag-Cat, capable of flying heavy loads over high elevation fields.

The Ag-Cat 600, powered with a Pratt & Whitney R-1340 radial engine and using a 9-foot-diameter constant-speed propeller, offers high performance plus a more practical plane for operators who deal with large acreage contracts, says Grumman.

Capable of a sea level rate of climb of 1600 ft./min. at gross weight, it will still maintain a rate of over 700 ft./min. at an altitude of 11,000 feet, Grumman says. General flight characteristics of the Ag-Cat 600 remain unchanged from their super-safe, lower-powered models, the company assures.

For more information, circle (702) on the reader service card in the front of this issue.



Hudson Manufacturing's "good-guy lady-bugs" are decorative paste-ons, 3⁄4" in di-ameter and printed on durable fabric.

Hudson Offers Yardful Of 'Good Guy Ladybugs'

The H. D. Hudson Manufacturing Company, makers of Hudson sprayers and dusters and an archenemy of insect pests, reports that "all bugs aren't bad."

Accordingly, the company is offering a "yardfull of good-guy ladybugs"-a 3-foot strip of fullcolor ladybugs-free for the asking as part of its ladybug jewelry promotion. The perky pasteons can be used to decorate almost anything (equipment, instore displays, stationery, clothing anywhere (in the office or at home), says Hudson.

For your free "yardfull" write on your business letterhead to the company's Advertising Department, 589 East Illinois St., Chicago 60611.

Stauffer Chemical Chooses Distributor for Vaporooter

Stauffer Chemical Company, New York, N. Y., recently licensed Airrigation Engineering Company, Inc. of Los Gatos, Calif., to market its new foam fumigant — Vaporooter[™] — for sewer root control.

The new fumigant, a watersoluble, surface-active formulation of Stauffer Chemical's VAPAM^R, controls growth of plant roots in sewer main interiors, according to the company. It also helps control fungi and bacteria that produce slime and fatty acids which generate hydrogen sulfite — the primary cause of unpleasant sewer odor.

Davey Tree Firms Join Forces, Expands Operations

The Davey Tree Expert Company with headquarters at Kent, Ohio has announced the recent acquisition of the San Franciscobased Davey Tree Surgery Company, Ltd.

Davey's new subsidiary, with branches in Arizona, California, Nevada, Oregon and Washington, now provides the company with a coast-to-coast operation.

Keith L. Davey, currently the 1969 president of the International Shade Tree Conference, will continue as president of Davey Tree Surgery.





INDUSTRY SURVEY

a comprehensive study of U.S. sod production and marketing practices

Cultivated sod is now a \$100 million crop in the United States. That's the wholesale price at the field. Not only are growers producing and selling more sod than previously thought, they've had more years in business than most in the industry would have guessed.

These and other new facts about sod came to light in a comprehensive study of the industry by WEEDS TREES AND TURF magazine staff members. This magazine study with the help of officials of the American Sod Producers Association has been able to pinpoint the current number of growers in the U.S. at about 900.

WTT's circulation lists include almost 1200 readers who categorize themselves as sod growers. These include, however, a number of larger farms where foremen and partners also receive the magazine. This list further includes about 40 who are primarily large grass seed producers. The WTT survey was sent to 1196 (see Table 1) growers. It

> Table 1. Results of survey among all sod producers on WEEDS TREES AND TURF circulation lists.

Survey	Questionnaires	Mailed*	1196
Questic	onnaires Returne	d	256
Returns			21.4%
*0-1.			

Complete Survey Questions

WEEDS TREES AND TURF, March, 1969

asked them to not return the questionnaire unless they were an owner-operator. The idea was to eliminate all duplications.

A total of 256 surveys were returned. This amounts to almost 30 percent of the estimated 900 growers in the nation. Thus the results proved to be excellent and the data are highly reliable.

New Market Facts

The 256 growers who reported their cultivated sod acreage said they were growing 45,967 acres. (see Table 2). Projected $(3\frac{1}{2} \text{ times } 256 \text{ equals the approximate } 896 \text{ growers in the nation and the same formula can be applied to their acreage), this$

Table 2. Report of growers on the number of acres of cultivated sod produced yearly in the United States.

Question: How many acres of sod do you have under cultivation?

Answers: 256

Total Acreage: 45,967

Average Acreage Per Farm: 179.5 acres

Projected (896 growers): 160,884 acres

Table 3. Report of growers on the number of acres of sod marketed yearly in the United States.

Question: How many acres of sod do you market each year?

Answers: 251

Total Acres Marketed: 20,990

Average Acreage Per Farm: 83.6 acres

Projected (896 growers): 74,905 acres

Table 4. Average number of years experience in growing sod among U.S. growers.

Question: How many years have you been growing sod? Answers: 251

Average: 9.6 years per grower

indicates a total sod acreage in the country of 160,884. This amounts to 179.5 acres per farm, again on the basis of almost 900 growers.

On the market side, growers report they are selling 83.6 acres of mature sod each year on a per farm basis. The 256 actually reported selling almost 21,000 acres in 1968. (see Table 3). When projected the actual figure is 74,905 acres marketed yearly. Selling prices of sod at the field vary from area to area, and there is even greater variation in field prices of speciality varieties. Even so, when the going field prices of sod are applied to the almost 75,000 acres being sold each year, the \$100 million estimated for the total crop becomes a reliable barometer of growth in this phase of the industry.

Growers have been in the business longer than WEEDS TREES AND TURF, March, 1969





WAYNE BRUSH CHIPPERS can solve your brush disposal problems with high speed and economy ... economy provided by exclusive 6 sided bed knife adding 50% more life than a conventional 4 sided knife. Multiple safety features assures maximum protection for your operating personnel.



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SALES, PARTS & SERVICE WORLDWIDE For More Details Circle (102) on Reply Card anticipated. The 251 reporting their experience show an average of 9.6 years per grower. (see Table 4). Sod farms vary greatly in size as expected (Table 5) and will likely continue to do so. Interesting is the fact that nine percent of all operators have more than 500 acres each of cultivated sod under production.

Varieties Grown

Only about nine percent of the growers reporting say they grow blends or special varieties. (see Table 6). But for those who do, these special types of sod account for more than half their own total

Acreage Reporting	Projected*	Percent
500 or more 23	81	9.0
300-499 22	77	8.6
100-299 74	259	28.9
50-99 58	202	22.7
25-49 29	102	11.3
Less than 25 50	175	19.5
Totals 256	896	100.0%
Based on 896 growers (N	lo. reporting	x 3½)
Table 6. Growers report o blends or special varieties	of sod.	
Question: Do you grow bl	lends or speci	al varieties?
Answers: 23 yes		
	Grown 54	.7% (blends)
Percent of Total Acreage (310WII 34	
Percent of Total Acreage (Total Acreage Reported		60 acres

production. Merion remains by far the dominant variety of cultivated sod (Table 7) though new varieties are making inroads in the market.

Despite the growth of cultivated sod, new methods of handling are lagging. More than one grower in three (some reported more than 1 method of handling) indicate they are still rolling and loading sod by hand. A number roll by machine and leave loading to customers. Still others sell their crop uncut and on a contract basis. Added up, the study indicates that more than half (see Table 8) of all growers are still doing much of the heavy labor required in sod production by hand.

More than half of all growers sell both at the field and also deliver sod. A total of 52.7 percent

Table 7. Varieties of cultivated sod now being grown in the U.S.

Question: What varieties of sod do you produce?

Variety	Answers	Acreage	% of Crop
Merion	. 144	17,455	38.0
Fylking	. 41	415	0.9
Windsor	28	825	1.8
Park	. 32	1,580	3.4
Newport	. 19	782	1.7
*Other	. 161	16,154	35.1
Unreported		8,757	19.1
	425	45,967	100.0%

*Pennlawn, Bahia, Centipede, St. Augustine, Bitter Blue, Zoysia, Tifgreen, Bermuda, Prato, Northrup-King, Penncross, Kentucky Blue, Delta, Buffalo, Tifdwarf, Tifton, Emerald, Warrens, Seaside, Gulf Brand, Miscellaneous Blends

Table 8. Methods of handling sod as reported by growers.Question: How do you handle sod?

	Number Reporting	Percent
Rolled and loaded by hand	114	37.6
Folded on pallets	48	15.9
Rolls on pallets	47	15.5
Rolled and loaded by elevator	37	12.2
*Other	57	18.8
Total	\$ 303	100.0%

*steel pallets; slabbed on pallets; harvester; rolled by machine and loaded by customers; hand shovel and hand load; sod pluggers and verticut; uncut and contracted

Table 9. Grower response as to where sod is delivered.

Question: Do you deliver to point of sale? 199 yes - 77.7% of growers

> Do you sell for pick-up at field? 192 yes—75.0% of growers

Both Practices - 135 yes - 52.7% of growers

said they used both methods (Table 9) in moving their crop. As to who buys the crop, the survey proved very revealing (see Table 10). More than 40 percent goes to landscapers. But one of every four acres sold goes direct to homeowners.

Selling Helps

More and more salesmen are being employed by growers to move their crop on a regular basis. A total of 39 growers of the 256 returning questionnaires said they employed one or more salesmen. (see Table 11). This on a projected basis would indicate that almost 300 are now employed in moving sod. In the field of advertising, the WTT study indicates that many growers are hesitant to use many of the advertising opportunities open to them. For example, less than half, only 47.4 percent, use telephone book yellow pages. (see Table 12). Fewer

Table 10. Report of growers on purchasers of cultivated sod in the U.S.

Question: Where do you market sod? Answers: 247

	Percent of Crop Sold
Landscapers	40.7
Direct to Homeowners	25.6
Industry	7.4
Garden Centers	6.9
Golf Courses	3.9
Other Sod Growers For Resale	3.5
*Other	

100.0%

*state and city governments; retail sod haulers and truckers; general contractors, builders and developers; cemeteries; schools; parks; utilities

Table 11. Number of salesmen employed by sod producers in marketing their cultivated sod.

Question: Do you employ salesmen?

Answers: 39 yes 217 no

Percent using salesmen: 15.2%

Total Salesmen employed: 82

Projected (total salesmen, 896 growers): 287

Table 12. Types of advertising used by growers in developing a market for cultivated sod.

Question: Do you do any advertising besides personal contact?

Answers: 171 yes 82 no

Types of advertising	No. answers	Percent
Yellow Pages		47.4
Newspapers		44.0
Direct Mail	51	20.0
Radio	23	9.0
Magazines	20	7.9
Television	2	.7
*Other		7.0
Total	s 346	139.0%

use local newspaper ads and even fewer use any form of direct mail.

By contrast, growers have made significant strides in improving efficiency. A big 68 percent WEEDS TREES AND TURF, March, 1969



17 Controllers, 1-24 Stations



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Table 13. Methods employed by growers to improve efficiency in handling and marketing sod.

Question: What steps have you taken to improve efficiency?

	Number Reporting	Percent
New Equipment		68.0
Changed Varieties		16.0
Advertised		7.6
Irrigated		5.9
*Other		2.5
T	otals	100.0%

*Changed personnel; invented equipment; fertilized more; changed handling and marketing methods; better seed

Table 14. Major problems of sod growers in producing and marketing cultivated sod.

Question: What do you consider the major obstacles for growers in sod production and marketing?

	Number Reporting	Percent
Labor (cost, shortage, turnover)		54.5
Price (low, high, pricecutting, greediness, control)	39	23.9
Consumer Education	17	11.0
Collecting		7.4
Over production	10	6.1
*Others	6	3.7
Tot	als	100.0%

*bad seed; diseases; competition; lack of product promotion; rising costs; fly-by-night installers

Table 15. Report of growers on the 1968 sod production business.

Question: How was your business in 1968?

	Number Reporting	Percent
Increased		53.9
Stayed about the same	94	38.0
Decreased		8.1
Т	otals	100.0%

Table 16. Business outlook of growers for 1969.

Question: What do you expect businesswise for 1969?

	Number Reporting	Percent
Better year		61.0
About the same		37.3
Worse than '68	4	1.7
	Totals	100.0%

report they have added new equipment during the last few years to improve management. (see Table 13). More than one in seven have changed varieties in an effort to improve their operations.

Major problems in growing and selling the crop would appear to be labor and pricing. More than half the growers said costs, shortages, and turnover of labor constituted their major problem. (see Table 14). Almost one of every four reporting listed pricing of the crop as the key problem area. Still others feel that consumers (homeowners and users generally) need to be made aware of the value of sod. Collecting, as expected, continues to be a problem in marketing.

Business Outlook Optimistic

Growers generally enjoyed a good year in 1968. More than 90 percent said business was as good or better than the previous season. (see Table 15). Significant is that more than half — 53.9% — said business increased.

For 1969, growers are especially optimistic. (see Table 16). More than six of 10, (or 61 percent) expect a better year than 1968 which was in itself a year of increasing business. Some 37.3 percent expect a year of about the same. Less than 2 percent — 1.7% — believe business will be down. These growers expectations — based on the experience of many veteran growers would indicate that an extremely strong market for sod will be the norm for 1969.



"JUST THIME - ONE OF THESE DAYS THIS WILL BE YOURS - IF SOME WOMAN ORIVER DOESN'T KNOCK YOU DOWN FIRST."

WEEDS TREES AND TURF, March, 1969